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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/808,192

03/24/2004

Daewoong Suh

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11/14/2006

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EXAMINER

JOHNSON, JONATHAN J

ART UNIT

PAPER NUMBER

1725

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/808,192

Applicant(s)

SUH, DAEWOONG

Examiner

Jonathan Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 4 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 10-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-22 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5-2-06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 8 and 10-22 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 9-18-06. Applicant argues that he cannot see where the statement that premixed contacts indicates claims are distinct because the product claims recite diffusion. While the examiner agrees with applicant's assertion that the product claims recite diffusion, the examiner notes that a product defined by the process by which it can be made is still a product claim (*In re Bridgeford*, 149 USPQ 55 (CCPA 1966)) and can be restricted from the process if the examiner can demonstrate that the product as claimed can be made by another materially different process.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Roman (Low Stress Die Attach by Low Temperature Transient Liquid Phase Bonding). Roman teaches a portion of one of the first and second contacts (page 1, contacts of the microelectronic) being covered with an interlayer that has a lower melting temperature than the first and second

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contacts; and bonding the first contact to the second contact by melting the interlayer to diffuse the interlayer into the first and second contacts, the bonded first and second contacts having a higher melting temperature than the interlayer before melting (table 1, items I-K); wherein bonding the first contact to the second contact includes exposing the interlayer and the first and second contacts to an environment having a temperature greater than the melting temperature of the interlayer but below the melting temperature of the first and second contacts (table 2, items I-K); wherein exposing the interlayer and the first and second contacts to an environment having a temperature greater than the melting temperature of the interlayer but below the melting temperature of the first and second contacts includes maintaining the interlayer and the first and second contacts within the environment until a portion of the interlayer diffuses into the first and second contacts (table 2, items I-K); wherein maintaining the interlayer and the first and second contacts within the environment until a portion of the interlayer diffuses into the first and second contacts includes maintaining the interlayer and the first and second contacts within the environment until a majority of the interlayer diffuses into the first and second contacts (table 2, items I-k); wherein maintaining the interlayer and the first and second contacts within the environment until a majority of the interlayer diffuses into the first and second contacts includes maintaining the interlayer and the first and second contacts within the environment until the interlayer is substantially diffused into the first and second contacts (page 3); wherein exposing the interlayer and the first and second contacts to an environment includes exposing the interlayer and the first and second contacts to the environment for a period of time (table 2, items I-k); wherein exposing the interlayer and the first and second contacts to the environment for a period of time includes exposing the interlayer and the first and second contacts to the

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environment until the interlayer melts and then solidifies within the first and second contacts (table 2, items I-k); wherein bonding the first contact to the second contact includes exposing the interlayer and the first and second contacts to an environment having a temperature less than 125 degrees Centigrade (table 2, items I-k). With respect to the substantially diffusion, it is the examiner's position that because substantially similar materials are heated at the substantially the same temperature, it is the examiner's position that the claimed bond would necessarily be present.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Johnson whose telephone number is 571-272-1177. The examiner can normally be reached on M-Th 7:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jonathan Johnson
Primary Examiner
Art Unit 1725

jj